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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,401	03/02/2004	Yuzuru Fukushima	09792909-5824	2557
26263	7590	03/02/2007	EXAMINER	
SONNENSCHEIN NATH & ROSENTHAL LLP			ALEJANDRO, RAYMOND	
P.O. BOX 061080			ART UNIT	PAPER NUMBER
WACKER DRIVE STATION, SEARS TOWER			1745	
CHICAGO, IL 60606-1080				
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/02/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/791,401	FUKUSHIMA ET AL.	
Examiner	Art Unit		
Raymond Alejandro	1745		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 02 March 2004.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-14 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-14 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 02 March 2004 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 02/26/07.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_ .

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 02/27/07 was considered by the examiner.

### ***Drawings***

3. The drawings were received on 03/02/04. These drawings are acceptable.

### ***Specification***

4. The preliminary amendment filed 03/02/04 does not introduce new matter into the disclosure.
5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. *It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," "The invention provides" etc.*

#### ***Claim Objections***

7. Claim 1 is objected to because of the following informalities: the language "*and a high molecular weight compound are contained*" in combination with other limitations appears to be grammatically awkward. Appropriate correction is required.
8. Claims 4-6 and 11-13 are objected to because of the following informalities: the language "*...one from the group consisting of...*" does not properly recite a Markush group. If applicant intends to recite a Markush group, then it should be changed to "*selected from the group consisting of...*". Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
10. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
11. The term "*high molecular weight*" in claims 1, 6-8 and 13-14 is a relative term which renders the claim indefinite. The term "*high*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In this case, it is not immediately

clear what is meant by "high", therefore, it is uncertain as to what specific compounds applicant intends to recite.

12. Claims 2 and 9 are indefinite as the mass ratio "= 15-75:85-25" is immediately unclear for purposes of ascertaining the specific mass ratio for each component, thereby rendering the scope of the claim vague. Appropriate correction is required.

13. Claims 5 and 12 recite the limitation "these carbonic acid esters" in lines 5. There is insufficient antecedent basis for this limitation in the claim.

14. Claims 6 and 13 are indefinite as the language "in recurring unit" fails to set forth a specific number of units so as to ascertaining the particular molecular weight/size of the intended polymer. Therefore, the scope of the claims is not immediately clear.

*Claim Rejections - 35 USC § 102*

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by the Japanese publication JP 2002-15771 (heretofore the JP'771).

The objective of the present application is aimed at an electrolyte wherein the disclosed inventive concept comprises the specific electrolyte composition.

As to claims 1 and 8:

The JP'771 discloses a non-aqueous electrolyte secondary cell and a non-aqueous electrolyte (TITLE). The cell comprises a positive electrode, a negative electrode and a non-aqueous electrolyte (P0045-0046, 0014, 0065, 0074/Abstract/CLAIM 7). The electrolyte comprises a mixture of solvents including ethylene carbonate (EC), propylene carbonate (PC),  $\gamma$ -butyrolactone (BL), vinylethylene carbonate (VEC), vinylene carbonate, ethylene sulfate, phenylethylene carbonate, tetraethylene glycol dimethyl ether (ABSTRACT/P0099, 0100, 0101).

Specifically, the JP'771 is concerned with a mixture of multiple solvents including a 4<sup>th</sup> and/or 5<sup>th</sup> component (CLAIMS 1-3). VEC can be the 5<sup>th</sup> component (P0130).

Table 5 shows an electrolyte solution comprising EC, PC, BL and VEC, wherein the weight percent of vinylethylene carbonate (VEC) ranges from 0.5-5 % (See TABLE 5). Further disclosed is the specific reasons for adding vinylethylene carbonate in the specified amount (P104, 0125). *Thus, the JP'771 teaches the claimed wt % range of VEC with sufficient specificity.*

Additionally, it is disclosed the use of polyacrylonitrile (PAN) or polyvinylidene fluoride (PVdF) in the non-aqueous electrolyte (P0057, 0154).

**Two approaches:**

- *the JP'771 discloses the claimed high molecular weight compound because it at once envisages combining an additional 4<sup>th</sup> and/or 5<sup>th</sup> component. In this case, either the 4<sup>th</sup> or the 5<sup>th</sup> component represents the high molecular weight compound.*
- *The JP'771 meet the claimed requirement because it discloses the use of polyacrylonitrile (PAN) or polyvinylidene fluoride (PVdF) in the non-aqueous electrolyte (P0057)*

As to claims 2 and 9:

EXAMPLE 39, among other, in TABLE 5 shows about 50:50 % ratio of EC and PC.

Other examples (See EXAMPLES 35-38 and 40-44) also show EC/PC ratio within the claimed ratio range.

As to claims 3-4 and 10-11:

The electrolyte solution comprises solvents and a Li-salt such as LiPF<sub>6</sub>, LiBF<sub>4</sub>, LiAsF<sub>6</sub>, LiCF<sub>3</sub>SO<sub>3</sub>, LiN(CF<sub>3</sub>SO<sub>2</sub>)<sub>2</sub> (P0096, 0131).

As to claims 5 and 12:

The electrolyte comprises a mixture of solvents including ethylene carbonate (EC), propylene carbonate (PC),  $\gamma$ -butyrolactone (BL), vinylethylene carbonate (VEC), vinylene carbonate, ethylene sulfate, phenylethylene carbonate, tetraethylene glycol dimethyl ether (ABSTRACT/P0099, 0100, 0101). Table 5 shows an electrolyte solution comprising EC, PC, BL and VEC, wherein the weight percent of vinylethylene carbonate ranges from 0.5-5 % (See TABLE 5).

As to claims 6-7 and 13-14:

Disclosed is the use of polyacrylonitrile (PAN) or polyvinylidene fluoride (PVdF) in the non-aqueous electrolyte (P0057, 0154).

Thus, the present claims are anticipated.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond Alejandro  
Primary Examiner  
Art Unit 1745



RAYMOND ALEJANDRO  
PRIMARY EXAMINER